

Prosoproctus pataecus, a New Genus and Species of Velvetfish from the South China Sea (Aploactinidae: Scorpaeniformes)

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Abstract *Prosoproctus pataecus*, a new aploactinid scorpaenoid taken from coarse coral and sand bottoms at depths of 69~84 m on MacClesfield Bank in the South China Sea, is described and figured from two specimens 20.6 and 19.9 mm in standard length. This species is unique among scorpaenoid fishes in having the anus positioned far forward, under the head, immediately behind the pelvic fin base. Like species of the subfamily Bathyploactininae, it has tubed anterior nostrils far forward on the snout, relatively elongate and spatulate preorbital and preopercular bones, and modified scales that have a central spine that is strongly curved posteriorly. Unlike bathyploactinines, it does not have restricted gill slits.

Aploactinid fishes are a group of little-studied Indo-West Pacific scorpaenoids. They are characterized by modified scales which give them a velvety appearance, by unbranched fin rays in all fins, and by blunt rather than pungent spines as typically seen in most scorpionfishes and their relatives. Because aploactinids are rare in museum collections, the family has never been comprehensively studied. Though some species were described in the middle of the last century, most species remain known from only one or a few specimens. As a result most species are known from a few localities, but it is likely that many will be found to occur over much wider areas of the Indian and Pacific Oceans.

In the course of continuing studies on the group (Poss, in preparation), two specimens from the South China Sea came to our attention. It soon became clear that these specimens did not belong to any genus or species currently recognized (see Poss and Eschmeyer, 1978, for a discussion of aploactinid genera and their current status). It is the aim of this paper to provide this description and to briefly discuss probable relationships.

Methods

Methods for taking counts and measurements follow those of Eschmeyer (1969). The

last two rays of the dorsal and anal fins are borne on a single pterygiophore and counted as one ray. Median fin ray counts were checked against radiographs. Abbreviations for the depositories of the type-specimens are: USNM, United States National Museum of Natural History; CAS, California Academy of Sciences.

Prosoproctus, gen. nov.

No literature applies to this genus.

Type-species: *Prosoproctus pataecus* Poss et Eschmeyer

Diagnosis. An aploactinid fish with anus positioned immediately posterior to pelvic fin base rather than near anal fin origin (Fig. 1). Dorsal XII, 8 or 9 (last double). Anal II, 7 (last double). Pelvic I, 3. Pectoral 13. Vertebrae 26. Branchiostegal rays 6. Body rather compressed; moderately covered with modified scales. Dorsal fin originating near anterior margin of orbit. Four dorsal spines and associated pterygiophores anterior to third neural spine. Anterior tubed nostril near tip of snout rather than in usual position midway between tip of snout and anterior border of eye. Fourth and fifth infraorbital bones absent. Postorbital branch of infraorbital lateral line canal absent. Teeth on jaws and vomer, none on palatines.

Description. As for the species below.

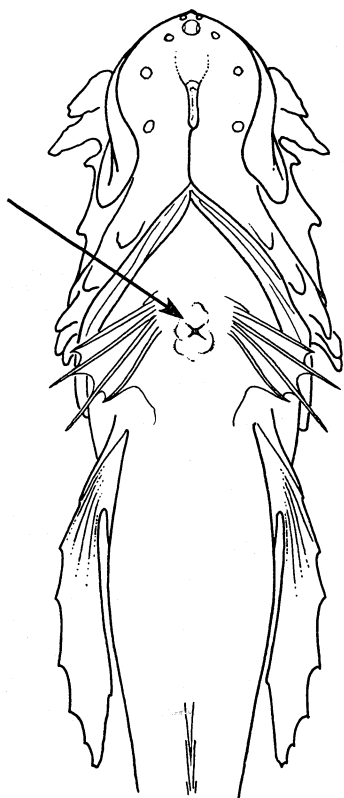


Fig. 1. Ventral view of *Prosoproctus pataecus*, holotype, 20.6 mm SL (arrow indicates location of anus).

Etymology. From the Greek, *proso* (in front)+*proctus* (anus), in reference to the forward position of the anus.

Prosoproctus pataecus, sp. nov.
(Figs. 1, 2)

No literature applies to this species.

Holotype: USNM 218689, 20.6 mm SL, South China Sea, MacClesfield Bank, 15°37.5'~36.8'N, 114°22.4'~25'E, 69~82 m, coarse sand and coral bottom, W.L. Chan, RV Cape St. Mary, cruise 3/64, station 41, Granton gear, 16 June 1964.

Paratype: CAS 41591, 19.9 mm SL, South China Sea, MacClesfield Bank, 15°37.5'~36.8'N, 114°12.2'~15.4'E, 73~84 m, coral bottom, W.L. Chan, RV Cape St. Mary, cruise 3/64, station 48, Granton gear, 17 June 1964.

Diagnosis. As for the genus above.

Description. (See also generic diagnosis above.) Dorsal fin originating over eye, just posterior to anterior margin of eye; second longest. First 3 dorsal spines notably widened and spatulate distally, with slight striations at tip; fourth or fifth spine shortest, with spines increasing in length posteriorly; first 3 spines with fleshy cirri. Dorsal fin membrane not notably incised. Pectoral rays 13, longest 7th or 8th from above; reaching to level of anterior anal rays. All fin rays unbranched. Gill rakers short, difficult to count, total 11, 2~3 on upper arch, 8~9 on lower arch.

Body rather compressed and moderately covered with modified, partially embedded scales which form spinous points that are strongly arched posteriorly and directed back (high magnification needed); skin between scales smooth. Lateral line somewhat high on body, with 9 tubed scales, last extending over base of caudal fin.

Head with a few modified scales on cheek, below anterior dorsal fin, in area behind eye, and on snout; naked otherwise. Moveable lachrymal bone (infraorbital one) with 2 prominent spines; first larger, directed down and back, extending over maxilla and premaxilla, tip broadened and flattened with notable striations; second narrower, also flattened and spatulate at tip and with striations. Blunt spine on second infraorbital bone. Third infraorbital bone with anterior ridge ending in blunt spine; infraorbital (suborbital) stay firmly united to preopercle, smooth and tapering somewhat posteriorly with small ridge. Interorbital ridges slightly raised; forming inverted U, bordered above by prominent lateral line pores; ridges nearly continuous, ending just before nasal bones. Nasal bones tubed, without spines. Most lateral line pores of head canals conspicuous, with large openings. Preopercle with 5 blunt spines; first longest, directed upward (less so in paratype) as well as back; second through fourth smaller, decreasing in size ventrally; fifth present as lumped ridge (nearly absent in paratype). Opercle with 2 ridges, both ending in small blunt spine, upper larger. Interopercle forming spinous projection posteriorly. Parietal spine as prominent ridge ending in blunt spine. Pterotic spine as smaller ridge

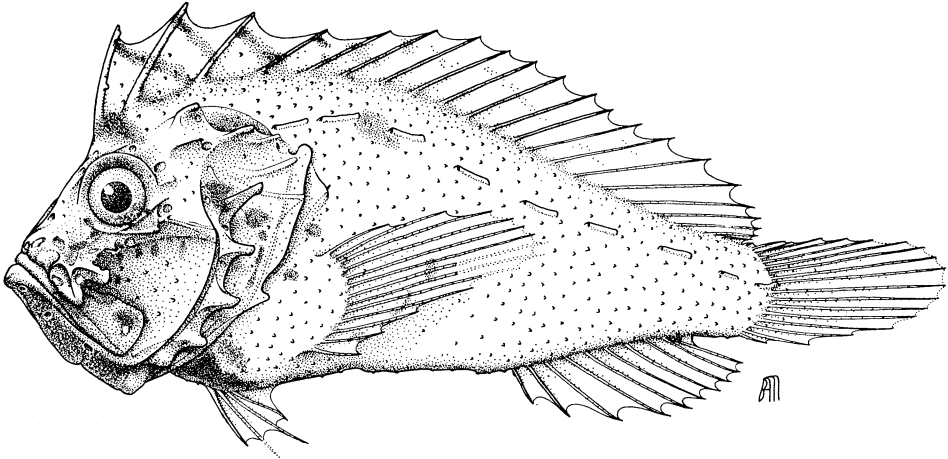


Fig. 2. *Prosoproctus pataecus*, holotype, 20.6 mm SL.

ending in small blunt spine. Posttemporal with strong ridge ending in blunt spine followed by supracleithrum with similar but smaller ridge and spine. Posterior border of cleithrum ending in small somewhat pungent spine. Lateral face of dentary directed mostly ventrally so that surface of dentary conspicuous in lateral view. Surface of dentary smooth, without cirri or modified scales; with 3 conspicuous lateral mandibular lateral line pores; a smaller pore, difficult to see, on anterior margin of dentary; a prominent pore opening medially on inner margin of lower jaw just posterior to symphysis. Tip of dentary with small symphyseal knob. Angular bone prominent, nearly vertical, strongly jutting ventrally with mouth closed. Maxillary extending to near level of posterior border of eye.

Pelvic fin origin well in advance of lowermost pectoral rays. Pelvic fin membrane adnate to body.

Caudal fin rounded, somewhat elongate, with 17 total (9 upper+8 lower) fin ray elements. Caudal skeleton with parahypural and hypurals 1 and 2 fused, hypurals 3 and 4 fused, hypural 5 autogenous; 2 epurals.

Color in life unknown. Color pattern in preservative faint (Fig. 2). Body color pale. Faint oblique brown bars running down and back on anterior part of dorsal fin. Dusky saddle over eye at base of first 2 dorsal spines, few faint patches of brown below third infraorbital bone and on operculum. Faint

brown spot on side of body between second and third lateral line scales (absent in paratype). Faint brown markings at upper base of pectoral and on pectoral fin.

Measurements in mm are as follows (holotype first, percent SL in parentheses): Standard length 20.6, 19.9. Head 8.6, 8.3 (42, 42). Snout 2.0, 2.1 (10, 11). Orbit 2.3, 2.1 (11, 11). Interorbit 2.0, 1.9 (10, 19). Jaw 4.0, 4.0 (19, 20). Postorbital 4.4, 5.0 (21, 25). Greatest body depth 7.8, 7.1 (38, 36). Predorsal 3.7, 3.3 (18, 17). Anal fin (base first spine to end of longest ray) 6.7, 7.3 (32, 37). Caudal fin 6.0, 6.0 (29, 30). Pectoral (base of upper ray to end of fin) 6.1, 5.5 (30, 28). Pelvic 3.3, 2.8 (16, 14). First dorsal spine 3.8, 3.9 (18, 20). Second dorsal spine 4.1, 4.1 (20, 21). Third dorsal spine 3.4, 3.4 (16, 17). Fourth dorsal spine 2.8, 2.4 (14, 12). Fifth dorsal spine 2.7, 2.4 (13, 12). Penultimate dorsal spine 3.2, 2.4 (15, 12). Last dorsal spine 2.9, 2.5 (13, 13). First anal spine 1.2, 1.0 (06, 05). Second anal spine 2.3, 1.7 (11, 08). Width between interorbital ridges 0.9, 0.7 (04, 03). Caudal peduncle 2.5, 2.5 (12, 13). Snout to second dorsal spine 4.5, 5.4 (22, 27). Snout to third dorsal spine 6.0, 6.4 (29, 32). Snout to fourth dorsal spine 7.8, 7.2 (38, 36). Snout to fifth dorsal spine 9.6, 9.2 (47, 46). Width of first dorsal spine at midlength 0.2, 0.3 (01, 01). Incision of fin membrane at fourth dorsal spine 0.2, 0.4 (01, 02).

Distribution. *Prosoproctus pataecus* is known

only from the type specimens from MacClesfield Bank in the South China Sea on a bottom of coarse coral and sand in 69~84 m.

Etymology. From the Greek *Pataikos*, an odd-shaped dwarflike Phoenician deity, and after *Pataecus*, a related genus.

Remarks. The position of the anus in *Prosoproctus pataecus*, which immediately distinguishes it from its near relatives, is unique among scorpaenoids, although the anus is somewhat in advance of the anal fin in some distant relatives, such as in *Sebastes jordani* where it is at the midbelly.

De Beaufort (1952) placed the genera *Acanthosphex*, *Kleiwegia*, and *Bathyploactis* in the family Bathyploactidae (sic) because they possess gill slits that are restricted by fusion of the branchiostegal membranes to the isthmus. This family, formerly recognized as a subfamily of the Aploactinidae by Whitley (1933), also includes the genus *Karumba* (see Whitley, 1966). Though *Prosoproctus pataecus* lacks restricted gill slits, it does share a number of features with these genera that suggest a relationship to them, and that the presence of restricted gill slits is insufficient to warrant family status for this group (restricted gill slits are seen elsewhere among scorpaenoid derivatives: Caracanthidae, Gnathanacanthidae, Congiopodidae, and some scorpaenids such as species of *Inimicus*). Like species of bathyploactinines, *Prosoproctus pataecus* has modified scales which are partially embedded in an otherwise smooth skin, with spinous points that are arched backward to a much greater degree than seen in most aploactinids, it has the anterior tubed nostril far forward on the snout rather than in a position midway between the tip of the snout and the anterior border of the orbit, and it has relatively long, somewhat spatulate preorbital and preopercular spines.

Though dissections were not made to determine the state of sexual maturity of our specimens, it is probable that like *Acanthosphex leurynnis* (see Ramaian and Rao, 1970), *Prosoproctus pataecus* matures at a very small size. Also as in *Acanthosphex leurynnis*, the first dorsal spines are spatulate and striated. In *Prosoproctus pataecus* the first 3 spines are so modified, though in *A. leurynnis* only the

first 1 or 2 spines are modified in this way. The pelvic fin is further back in *Acanthosphex leurynnis* and the anus is in the normal position.

Acknowledgments

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南シナ海で採れたイボオコゼ科の新属新種 *Prosoproctus pataecus*

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南シナ海, MacClesfield Bank で採れたイボオコゼ科の新属新種 *Prosoproctus pataecus* を記載した。この種類は、肛門が頭の下、胸鰭の直後に開くことが特徴である。